

MRI150.17

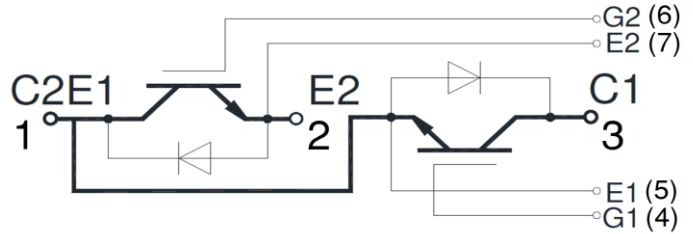
2 in 1 IGBT Modules

Features:

- VCE(sat) with positive temperature coefficient
- Low VCE(sat) Trench IGBT technology
- Maximum junction temperature 175°C
- 10µs short circuit capability
- Fast & soft reverse recovery anti-parallel FWD

Typical applications:

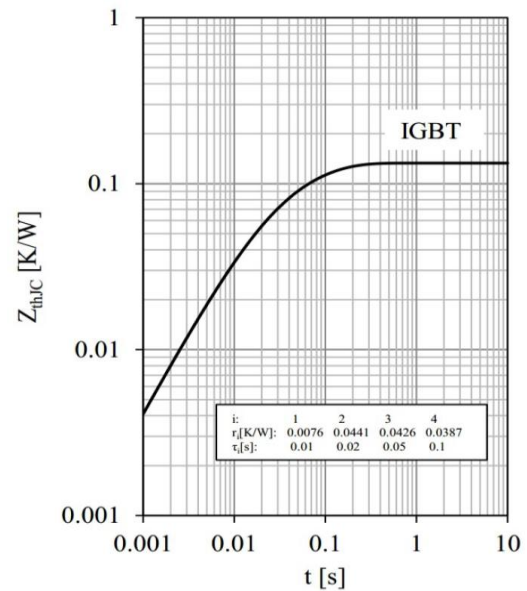
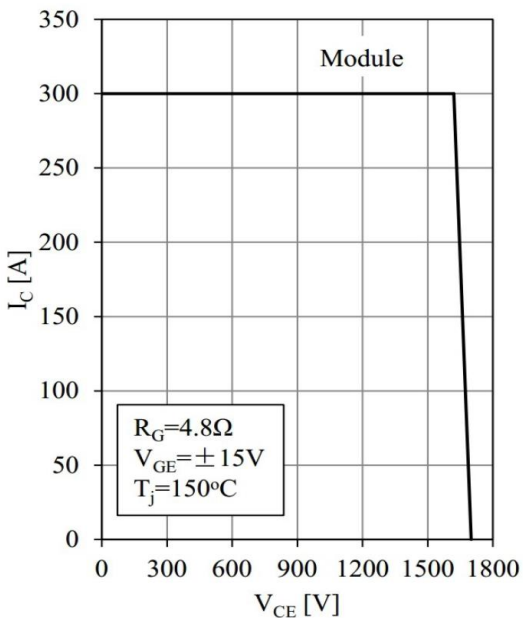
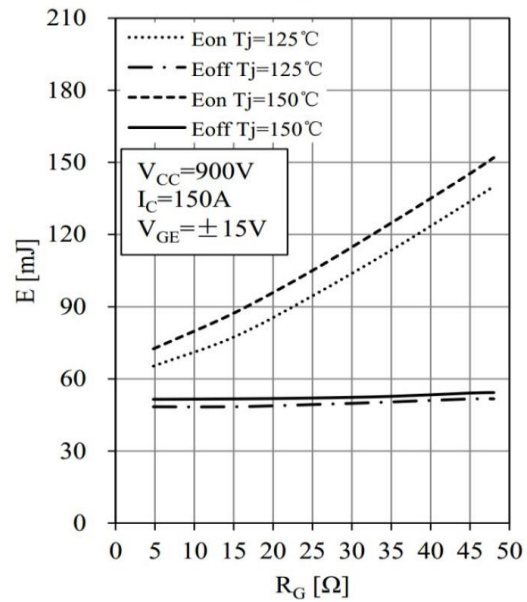
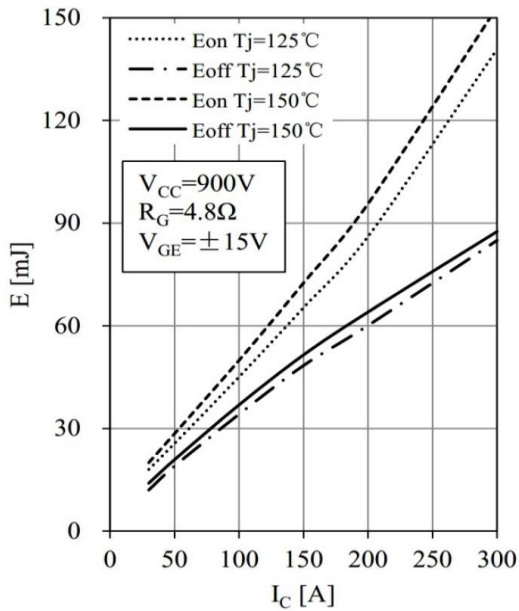
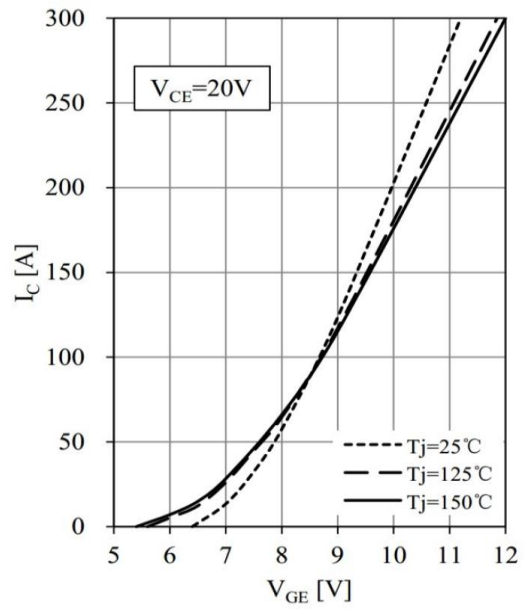
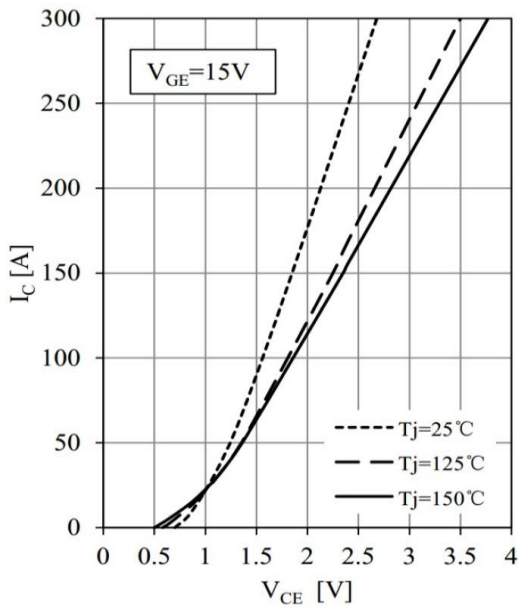
- High frequency switching application
- Motor drives
- UPS system

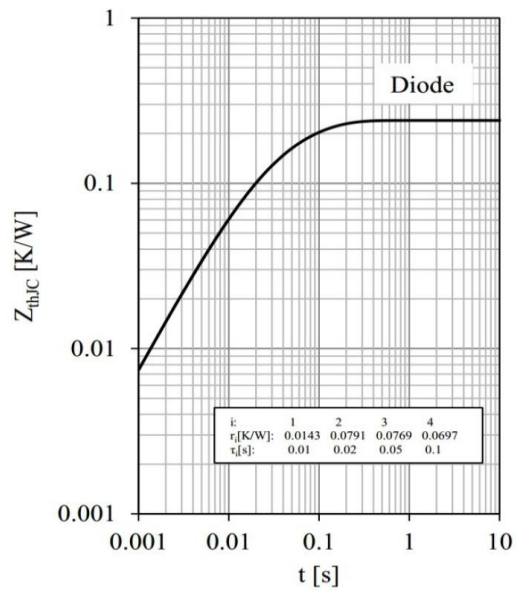
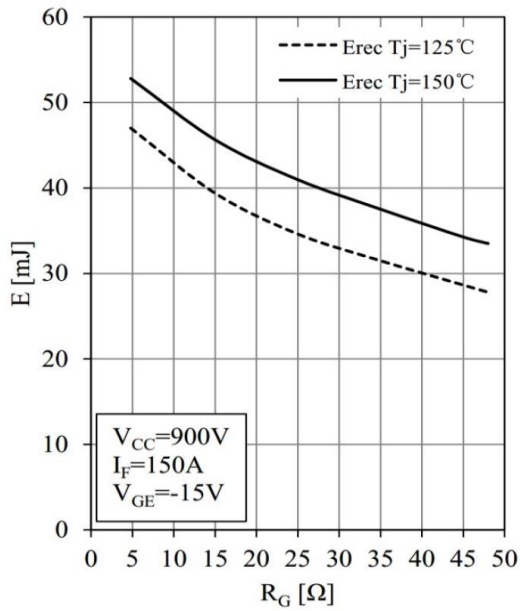
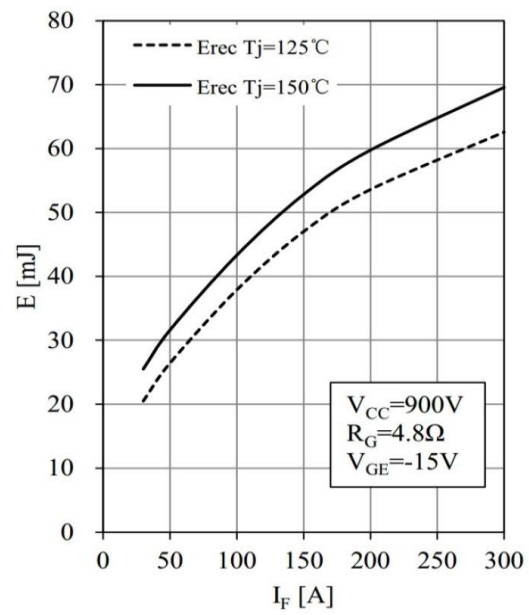
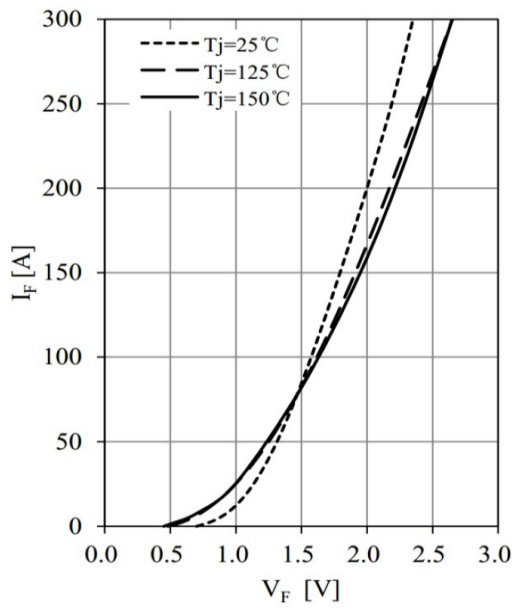


Symbol	Characteristics	Test Conditions	Value			Unit
			Min	Typ	Max	
● IGBT, Inverter						
V _{CES}	Collector-Emitter voltage	T _J = 25°C			1700	V
V _{GES}	Gate-Emitter voltage	T _J = 25°C			±20	V
I _C	Collector current	Continuous @ T _c = 25 °C			280	A
		Continuous @ T _c = 100 °C			150	A
I _{CP}	Repetitive peak collector current	T _p = 1 ms			300	A
P _{tot}	Power dissipation per IGBT	T _C = 25°C, T _J = 175°C			1127	W
I _{CES}	Collector-emitter cut-off current	T _J = 25°C, V _{CE} = 1700V, V _{GE} = 0V			5	mA
I _{GES}	Gate-Emitter leakage current	T _J = 25°C, V _{CE} = 0V, V _{GE} = ±20V	-400		400	nA
V _{GE(th)}	Gate-Emitter threshold voltage	T _J = 25°C, V _{CE} = 20V, I _C = 6mA	5.6	6.2	6.8	V
V _{CE(sat)}	Collector-Emitter saturation voltage	T _J = 25°C, V _{GE} = 15V, I _C = 150A		1.85	2.20	V
		T _J = 125°C, V _{GE} = 15V, I _C = 150A		2.25		V
		T _J = 150°C, V _{GE} = 15V, I _C = 150A		2.35		V
Q _g	Gate charge	V _{GE} = ±15V		1.41		μC
R _{Gint}	Internal gate resistor	T _J = 25°C		4.3		Ω
C _{ies}	Input capacitance	T _J = 25°C, V _{CE} = 25V, V _{GE} = 0V, f = 1MHz		18.1		nF
C _{res}	Reverse transfer capacitance			0.44		nF
t _{d,on}	Turn-on time	T _J = 150°C, V _{CC} = 900V, I _C = 150A, V _{GE} = ±15V, R _G = 4.8Ω, inductive load		240		ns
t _r	Rise time			55		ns
t _{d,off}	Turn-off time			624		ns
t _f	Fall time			180		ns
E _{on}	Turn-on energy loss per pulse			72.5		mJ
E _{off}	Turn-off energy loss per pulse			51.5		mJ
I _{sc}	SC data	V _{GE} ≤ 15V, V _{CC} = 1000V, V _{CEmax} = V _{CES} -L _{sCE} ·di/dt, tp ≤ 10μs, T _J = 150°C		600		A
R _{th (j-c)}	Thermal resistance, junction to case	Per IGBT			0.133	°C/W
T _{jop}	Temperature under switching conditions		-40		+150	°C

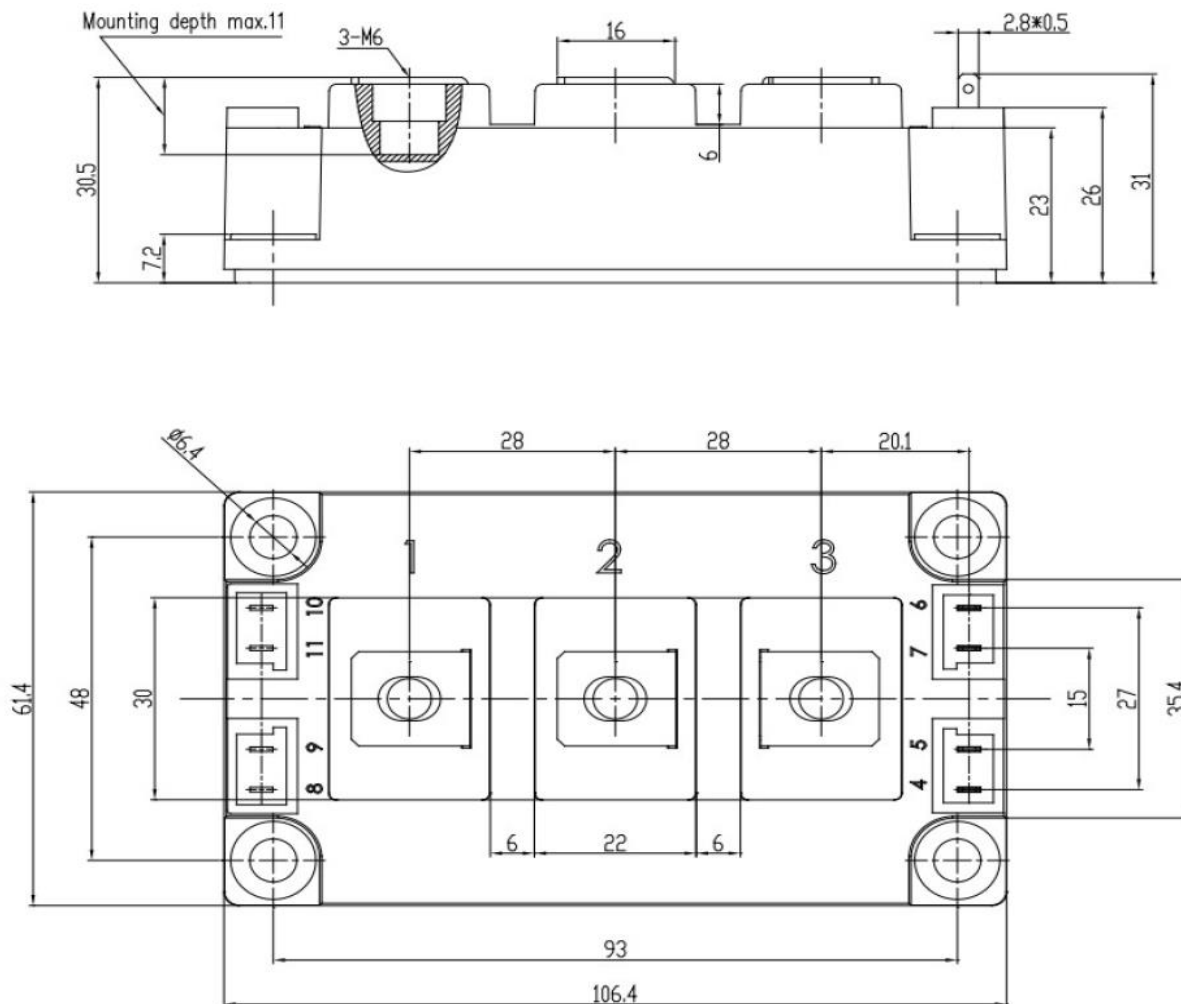
Symbol	Characteristics	Test Conditions	Value			Unit
			Min	Typ	Max	
● Diode, Inverter						
V _{RRM}	Repetitive peak reverse voltage	T _j = 25°C			1700	V
I _F	Forward current	Continuous			150	A
I _{FRM}	Repetitive peak forward current	T _p = 1ms			300	A
V _F	Forward voltage	T _j = 25°C		1.80	2.25	V
		T _j = 125°C		1.90		V
		T _j = 150°C		1.95		V
I _{RM}	Peak reverse recovery current	V _R = 900V, I _F = 150A, di/dt = 330A/μs, V _{GE} = -15V T _j = 150°C		240		A
Q _{RR}	Reverse recovery charge			93.5		μC
E _{rec}	Reverse recovery energy			52.8		mJ
R _{th (j-c)}	Thermal resistance, junction to case	Per diode			0.24	°C/W
T _{jop}	Temperature under switching conditions		-40		+150	°C

• Package						
$R_{th(C-H)}$	Thermal resistance, case to heatsink	per module		0.01		$^{\circ}\text{C}/\text{W}$
V_{ISO}	Isolation test voltage	$T_j = 25^{\circ}\text{C}$, AC: 1 minute	4000			V
T_{jmax}	Max junction temperature				+175	$^{\circ}\text{C}$
T_{stg}	Storage temperature		-40		+125	$^{\circ}\text{C}$
M	Mounting torque for module (M6)		3.0		5.0	N·m
	Terminal connection torque (M6)		2.5		5.0	N·m
W_t	Weight			300		g
Outline	454H3P					





Outline:



(dimensions in mm)

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